



## CNG Station Proposal for DeKalb County Sanitation - East Transfer



DeKalb County (DeKalb) currently operates one of the largest fleets of Compressed Natural Gas (CNG) vehicles in Georgia. DeKalb has two existing CNG fueling stations and is planning to potentially develop a third CNG fueling station at their East Transfer facility located at 1750 Rogers Lake Rd., Lithonia, GA.

Southern Company Gas, through its Atlanta Gas Light (AGL) subsidiary, is the natural gas utility serving this area. AGL has a long history with building and maintaining CNG stations for its customers in Georgia and is well positioned to support DeKalb on this project. AGL recently installed a CNG station for DeKalb at their Central Transfer facility in Decatur under the AGL CNG Infrastructure Program. The compressor side of this station was paid for with a disbursement from the Universal Service Fund (USF) as part of an initial allocation of funding approved by the Georgia Public Service Commission (GPSC).

AGL also has a Natural Gas Vehicle (V-52) Rate on file with the GPSC which provides for AGL to build CNG stations for its customers in Georgia. Under the V-52 rate, AGL can install the complete station including the dispenser islands. AGL is proposing to install and maintain a CNG station to meet the needs of DeKalb at the East Transfer facility. Under this arrangement, AGL would provide a regulated utility service of delivering CNG to the outlet of the fast-fill hoses/dispensers. AGL would recover its costs of capital, depreciation, authorized rate of return, comprehensive maintenance, taxes, etc. through the V-52 Facilities Charge which is 1.5% per month. This Facilities Charge would be added to the natural gas bill DeKalb would receive from their marketer.

AGL would take care of all preventive maintenance and repairs so that DeKalb and its customers would simply utilize the station. DeKalb would purchase the natural gas delivered to the AGL meter from a marketer just like any other commercial natural gas account. As such, DeKalb would effectively be making its own CNG with the AGL equipment. DeKalb would determine the price of the CNG for retail sales, retain the benefit of any price spread between diesel/gasoline and natural gas prices, pay any applicable motor fuel taxes, and file to receive any alternative fuel tax credits that might be available.

## Proposed CNG Station

For the purposes of this high level proposal, AGL has developed a preliminary budget cost estimate based on the following assumptions. AGL will work with DeKalb to determine the specific operational needs and site conditions and refine the station design and cost estimate accordingly.

### Assumptions:

- Based on current throughput levels at the DeKalb Central station and DeKalb's plans to continue to grow its CNG fleet, it is anticipated that DeKalb East Transfer would eventually dispense about 720,000 Gasoline Gallon Equivalent (GGE) per year or 2,000 GGEs per day.
- Fueling will be available 24-7, 365 days per year.
- The vehicle arrival patterns are unknown since this would be a public fast-fill station and several vehicles could arrive at one time resulting in a "peaky" kind of demand profile.

Based on these assumptions, one (1) 520 cfm compressor package capable of delivering 250 GGE per hour would be sufficient to provide the required fueling for this phase 1 of the project. However, AGL proposes to install two (2) 520 cfm compressors so that DeKalb would be able to normally deliver 500 GGE per hour and have a level of redundancy to still be able to fuel vehicles with one compressor off line. The two compressors would enable DeKalb to easily dispense the projected 2,000 GGEs per day and, depending on traffic flow patterns, potentially up to 8,000 - 10,000 GGEs per day.

Unlike liquid fuels, which are stored onsite in large tanks and dispensed using a small horsepower motor, natural gas is delivered via underground pipelines and dispensed after being compressed to a nominal 3,600 PSI. The ability to deliver CNG over an extended period of time is dependent on the capacity of the station's compressors. CNG storage is very expensive so normally only a limited amount of storage is installed at CNG stations to facilitate fast-fill transfer of the fuel. This proposed station would have roughly 70,000 standard cubic foot (scf) of storage to help accommodate spikes in demand when multiple vehicles arrive simultaneously. Using the combination of storage and compression, this station would have the ability to deliver roughly 300 GGE in the first 15 minutes or 430 GGE in the first 30 minutes. Then if vehicles continued to arrive continuously it would be limited to about 500 GGE for every hour after that until the storage has time to recover.

### Primary Station Components for Phase 1:

- Two (2) Ariel 4 stage compressors, nominal 520 scfm each
- Starter panel (1)
- Manual Regen gas dryer (1)
- Storage cylinders, 12,000 scf each (6)
- Two (2) Dual hose dispensers
- Two (2) card readers
- Fast-fill panel (1)

Estimated cost = \$1.95 million

Note: This proposed station is very similar in capacity and functionality to the DeKalb Central Station. And just like at DeKalb Central, provisions would be made to add additional compressor(s) for a potential Phase 2 of this CNG station project.

Please note this cost estimate is just for the CNG equipment. It includes the civil engineering and concrete work for equipment pads, dispenser islands, canopy, etc. but does not include cost of land or any extensive site work such as grading, paving, etc. From discussions with DeKalb personnel, it is understood an area could be set aside for the CNG station on the property that DeKalb owns. As such, these estimates were developed based on the assumption the area is fairly level and the existing soil can be reused (no contaminants). We can install the compression compound in an area as small as 1,600 sq. ft. as long as minimum clearances from buildings, property lines, etc. are met.

AGL will work with DeKalb to determine the specific operational needs and site conditions, thereby refining the station design and cost estimate accordingly.

## Equipment Selection

AGL will own the CNG station equipment and therefore reserves the right to select the type of equipment which best suits the operational requirements of the project and purchase from vendors of its choosing. However, AGL is certainly willing to take input from DeKalb and share the design criteria with DeKalb prior to making any final decisions.

AGL has generally standardized on Ariel compressors for the larger capacity CNG stations. We have purchased Ariel compressor packages from both ANGI Energy and JW Energy. For the driers, we are primarily using PSB equipment. We have typically bid storage out as part of the overall equipment purchase. Many of the vendors have made advance purchases of storage in volume which yields a good price point and so we have allowed the compressor vendors to propose their choice of manufacturer and cylinders vs. spheres. AGL has years of experience with Tulsa Gas Technologies (TGT) dispensers and is a dealer of TGT equipment. We specify TGT dispensers on most of our projects and find they are more robust and trouble free than most of the other CNG dispensers available.



Typical CNG Compressor Packages, Courtesy of ANGI Energy Company

## V-52 Rate

Under this proposal, DeKalb would sign a V-52 service agreement agreeing to pay the monthly V-52 facilities charge of \$29,250 for an initial minimum ten (10) year term. The following illustrates how the V-52 rate would be applied and resulting effective cost per GGE based on estimated usage of 720,000 GGE/year:

Station Cost Basis		\$1.95 million
Delivered Gas Cost*	$\$4.00/\text{mmBtu} \times 0.125 \text{ mmBtu/GGE} =$	0.50
V-52 Facilities Charge	$(\$1.95 \text{ Million} \times 1.5\%) / 60,000 \text{ GGE} =$	0.49
Electricity	Based on $\$0.15/\text{kWh}$ , $0.68 \text{ kWh/GGE}$	<u>0.10</u>
Total (\$/GGE)	(Not including taxes)	\$1.09

\* Note: The delivered gas cost is representative of current commodity prices including interstate transportation and local delivery for CNG stations served by a marketer on AGL's system. DeKalb would negotiate with a marketer for actual gas prices and delivery rates.

For discussion purposes only. The cost and usage estimates shown are just a guide and Atlanta Gas Light makes no warranties regarding the accuracy of these estimates.

## CNG Station Operations & Maintenance

AGL has a team of highly trained and experienced CNG station technicians based throughout the state of Georgia who are fully dedicated to doing just CNG station maintenance for our customers. These technicians have all the equipment, tools, training, and other resources necessary to maintain the CNG equipment AGL would install for DeKalb. AGL's CNG technicians are available 24/7 and the department has a 1-800 number so the CNG technician on duty can always be reached.

As discussed previously, AGL would own the CNG station and provide CNG as a utility service. AGL would be solely responsible for the maintenance of the station. This would include performing all the regular preventive maintenance on the driers, compressors, dispensers, and other station components in accordance with the manufacturer's recommended maintenance intervals and best practices. AGL would also remotely monitor all the important station performance parameters and respond in a timely fashion to any upset conditions.

DeKalb personnel or customers would be responsible for the actual fueling of the vehicles. DeKalb would also pay the electric bill for operating the station since the cost of electricity is not included in the V-52 Rate.

## Installation of AGL Distribution Facilities

As part of this proposal, AGL would install a new gas line and measurement facilities to deliver the necessary volume of gas (1,040 cubic feet/minute) at an elevated delivery pressure. The installation of these distribution facilities would be handled under a separate standard AGL agreement, the Non-Residential Extension Contract, in Accordance with AGL's Rule 8 covering extension of AGL facilities, as approved by the GPSC. Under Rule 8, AGL is authorized to calculate an "allowable investment" for each new commercial customer it serves based on the estimated annual delivery charges revenue multiplied by an investment factor commensurate with the term of the agreement.

Atlanta Gas Light proposes to serve this project by installing a new 4" high pressure gas main to the site from an existing 4" gas main at the intersection of Rogers Lake Rd and Maddox Rd, approximately 3,100 feet away. Depending on DeKalb's annual volume commitment, the allowable investment may be enough to cover the cost of installing these new facilities. If it doesn't quite cover 100% of the cost the remaining "Contribution in Aid of Construction" due from DeKalb County would not be prohibitive.

## Summary

AGL has developed this proposal based on the CNG fueling infrastructure we believe will best meet the needs of DeKalb at the proposed new location. AGL will work closely with DeKalb to refine the station design as needed. The V-52 rate is already in place so there are no GPSC regulatory approvals required. The longest lead time item is the compressors which typically take about 18 - 22 weeks to manufacture. AGL would work concurrently to apply for the necessary permits and install the new gas main. A realistic estimate of the timeline for completion of this project is 9 - 12 months from signing of the necessary agreements.

## Atlanta Gas Light Compressed Natural Gas (CNG) Experience

Southern Company Gas, through its Atlanta Gas Light (AGL) subsidiary, has been building and maintaining Compressed Natural Gas (CNG) refueling stations for fleet Natural Gas Vehicle (NGV) customers since the early 1990s. AGL currently has ten CNG stations at our service centers, owns 12 stations on fleet customers' private property, and maintains about 30 more customer-owned stations across the state of Georgia and Alabama. We have a staff of seven full-time dedicated CNG technicians in Georgia who provide comprehensive maintenance services to support CNG stations in Georgia. AGL also has a CNG maintenance hotline so we can provide 24 hour emergency response for our customers.



### MARTA Contract

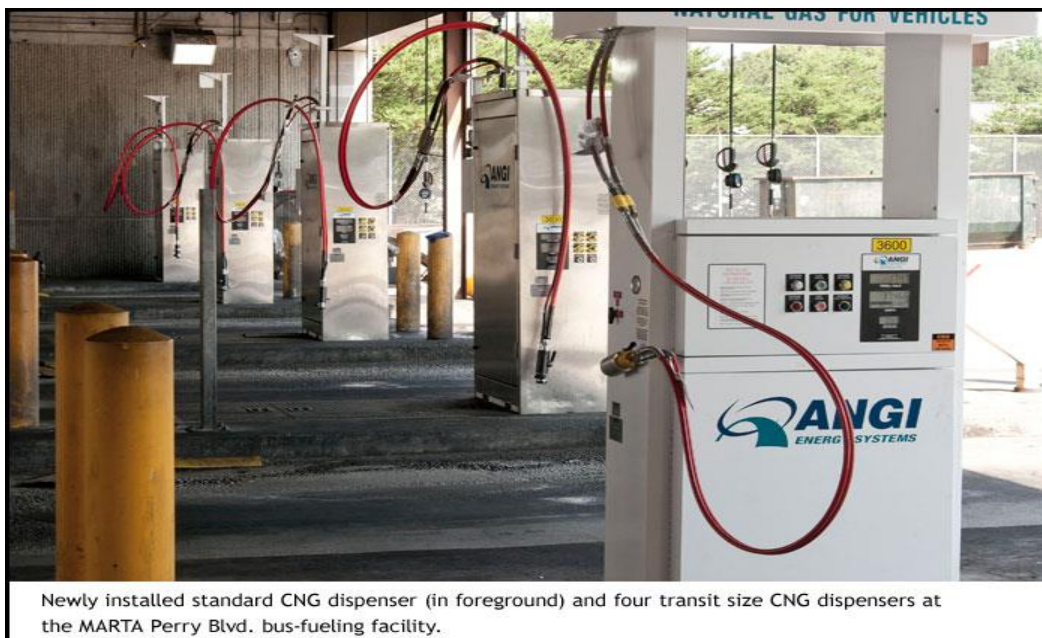
MARTA, the transit agency in Atlanta, operates about 460 CNG transit buses in the city of Atlanta. AGL built the first refueling station for MARTA in 1996 at Perry Blvd., Atlanta and then MARTA installed a second station in 2000 at Laredo Dr., Decatur. AGL is under contract with MARTA to provide comprehensive maintenance services for both stations. Each station has four engine-driven 1,100 cfm compressors and the total usage is about 8 million gallons/year.



AGL also recently completed a \$3.2 million capacity upgrade and modernization project for MARTA at the Perry Blvd. facility. Upgrading 20-year-old technology added complexity to the project which had to be completed while the facility remained in use and without disrupting the routine nightly bus fueling operations. The successful completion of this project underscores AGL's capabilities for CNG construction and maintenance in the Southeast.

The \$3.2 million project at MARTA Perry Blvd. consisted primarily of the following upgrades:

1. Installation of a fourth engine-drive compressor (ANGI 1,100 cfm package)
2. New gas dryer
3. Additional 60,000 cubic feet of storage
4. New dispensers (4 Transit & 1 Light Duty)
5. New piping configuration, valve panel and control system
6. Addition of remote access to HMI and controls



Newly installed standard CNG dispenser (in foreground) and four transit size CNG dispensers at the MARTA Perry Blvd. bus-fueling facility.

## UPS Contract

In addition, AGL recently built two large private CNG stations for United Parcel Service (UPS) in the Atlanta area under AGL's V-52 rate. The Pleasantdale Road location has 6 x 800 cfm (4,800 cfm total) of compression and nine fast-fill dispensers to fuel 92 Class 8 tractors and 150 package cars. The Fulton Industrial Blvd. (Atlanta) location has 3 x 800 cfm (2,400 cfm total) of compression, 20 time-fill hoses, and 4 fast-fill dispensers to fuel 33 tractors and 150 package cars. AGL owns and maintains these two stations and provides CNG to UPS as a utility service.



## Examples of other Stations Built By AGL

Langdale Fuels in Valdosta, GA opened in August 2013.





Premier Transportation in Forest Park, GA opened in April 2014.



Flint River Fuels in Oglethorpe, GA opened in December 2014.



City of Atlanta, two limited access “combination-fill” (time-fill and fast-fill) stations in January 2016.



DeKalb County's "Central" Facility in Decatur, GA opened in February 2016.

